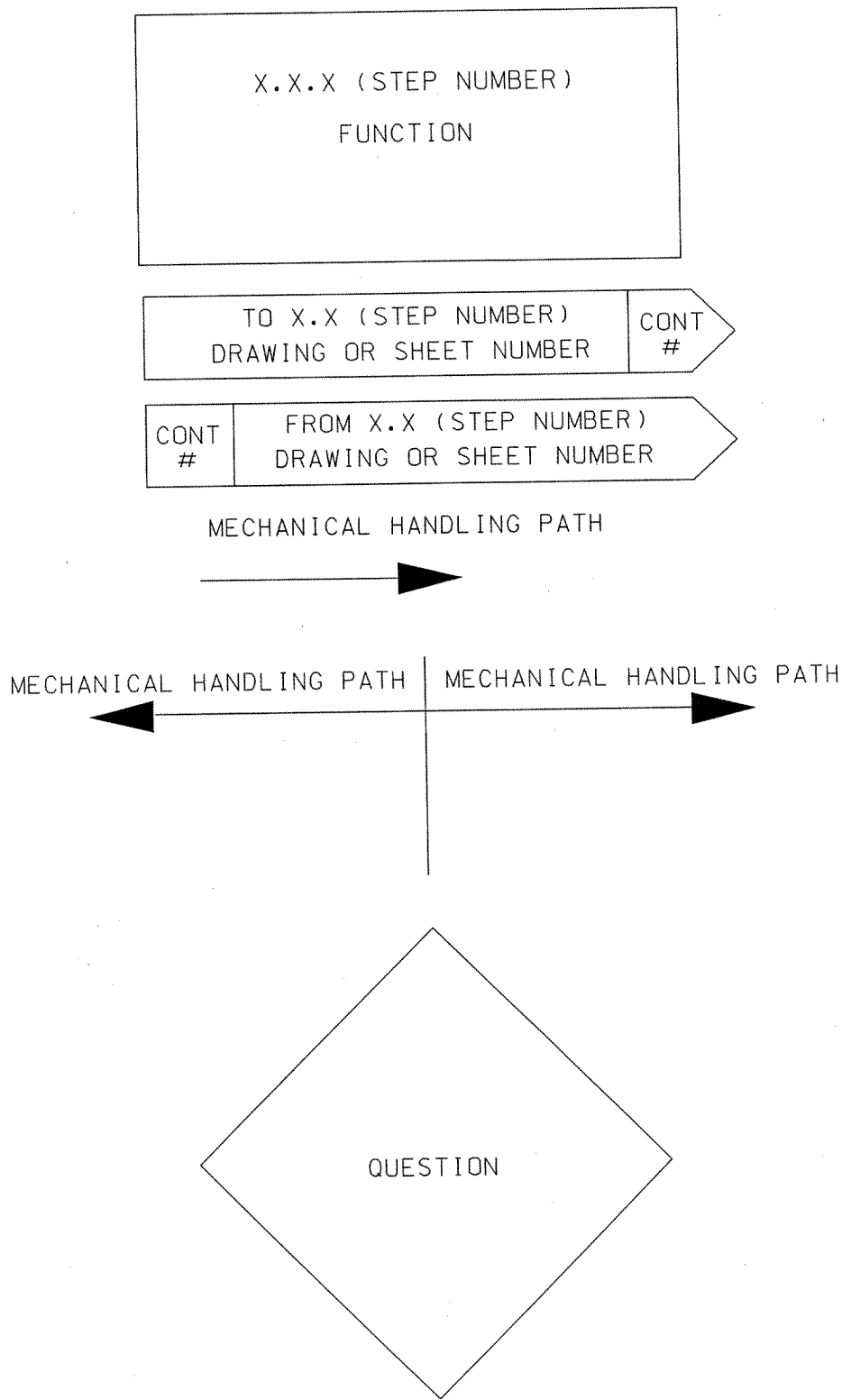


GENERAL NOTES:

- 1. THIS DOCUMENT DEPICTS THE THIRD LEVEL (LEVEL 3) FUNCTIONAL FLOW OF MECHANICAL EQUIPMENT AND MATERIAL NECESSARY TO HANDLE AND PACKAGE SNF.
- 2. FOR ABBREVIATIONS, ACRONYMS AND NOMENCLATURE SEE YUCCA MOUNTAIN PROJECT- MECHANICAL HANDLING-BLOCK FLOW DIAGRAM - LEVEL 1 DRAWING 000-MHO-MGRO-00101-000.
- 3. SUBSYSTEM NUMBERING:
 - 1. CASK/WP HANDLING SUBSYSTEM
 - 2. WASTE TRANSFER SUBSYSTEM
 - 3. WASTE PACKAGE CLOSURE SUBSYSTEM
 - 4. WASTE PACKAGE LOADOUT SUBSYSTEM
- 4. SURVEY AND DECONTAMINATION OPERATIONS MAY BE CONDUCTED AT VARIOUS STAGES OF THE PROCESS. NO SURVEY OR DECONTAMINATION IS SHOWN ON THIS BFD.
- 5. OPENING AND/OR CLOSING OF DOOR(S) IS A PREREQUISITE FOR THIS STEP.
- 6. GAS SAMPLING AND CASK EQUALIZING IS A PREREQUISITE FOR THIS STEP.
- 7. ALL TRANSFER STEPS REQUIRE OPERATOR AND MACHINE VERIFICATIONS FOR PROPER GATE AND SKIRT CLOSURE/ OPENINGS, AS WELL AS CANISTER TRANFER MACHINE POSITIONING.
- 8. APPLICABLE LIFTING DEVICE WILL BE ATTACHED TO THE OVERHEAD CRANE.
- 9. APPLICABLE GRAPPLE WILL BE ATTACHED TO THE CANISTER TRANSFER MACHINE PRIOR TO THIS STEP.
- 10. USE OF EXTENDED TOOLS FOR REMOTE HANDLING MAY BE REQUIRED FOR HANDS ON OPERATIONS BASED ON ALARA EVALUATIONS. THIS APPLIES TO ALL "COMMON TOOLS" DESIGNATIONS.
- 11. QUALITY LEVEL IS NOT APPLICABLE BECAUSE THIS DRAWING IS NOT ISSUED FOR PROCUREMENT, CONSTRUCTION, OR FABRICATION.
- 12. ACRONYMS NOT LISTED ON LEVEL 1 BFD
 - NDE - NON DESTRUCTIVE EXAMINATION
- 13. NAVAL CASKS CONTAIN NAVAL SNF CANISTERS DOE CASK CONTAIN DOE HLW CANISTERS
- 14. A HOLD IS BEING PLACED UNTIL DRAWING 800-MHO-HEEO-00201-000-00B HAS BEEN ISSUED.

LEGEND



MECHANICAL HANDLING EQUIPMENT	
EQUIPMENT NAME	EQUIPMENT NUMBER
WP CLOSURE ROOM CRANE	51A-HWWO-CRN-00001
BUMPY BAR CODE READER	51A-HWAO-TOOL-00001
SPREAD RING EXPANDER TOOL	51A-HWRO-TOOL-00001
WELD END EFFECTOR 1	51A-HWWO-TOOL-00001
WELD END EFFECTOR 2	51A-HWWO-TOOL-00002
MACHINE VISION TOOL	51A-HWTO-TOOL-00001
UT/ET END EFFECTOR 1	51A-HWTO-TOOL-00004
UT/ET END EFFECTOR 2	51A-HWTO-TOOL-00005
SPREAD RING LEAK TEST TOOL	51A-HWTO-TOOL-00006
PURGE PORT TOOL	51A-HWIO-TOOL-00001
BURNISHING TOOL	51A-HWSO-TOOL-00001
ROBOTIC ARM 1	51A-HWHO-HEQ-00001
ROBOTIC ARM 2	51A-HWHO-HEQ-00002
REMOTE HANDLING SYSTEM	51A-HWHO-HEQ-00003
RHS MANIPULATOR ARM	51A-HWHO-HEQ-00004
WELD DRESSING END EFFECTOR 1	51A-HWWO-TOOL-00003
WELD DRESSING END EFFECTOR 2	51A-HWWO-TOOL-00004

MECHANICAL HANDLING EQUIPMENT	
EQUIPMENT NAME	EQUIPMENT NUMBER
CASK HANDLING CRANE	51A-HMCO-CRN-00001
CASK YOKE TYPE 1	51A-HMCO-BEAM-00001
CASK YOKE TYPE 1 STAND	51A-HMCO-RK-00001
CASK YOKE TYPE 2	51A-HMCO-BEAM-00002
CASK YOKE TYPE 2 STAND	51A-HMCO-RK-00002
NAVAL CASK LIFTING DEVICE	51A-HMCO-BEAM-00003
NAVAL CASK LIFTING DEVICE STAND	51A-HMCO-RK-00003
MOBILE PLATFORM TROLLEY	51A-HMCO-PLAT-00001
IMPACT LIMITER STAGING RACK	51A-HMHO-RK-00001
CASK LID STAND	51A-HMHO-RK-00002
CASK TRANSFER TROLLEY	51A-HMHO-TRLY-00001
CASK PEDESTAL 1	51A-HMHO-PED-00001
CASK PEDESTAL 2	51A-HMHO-PED-00002
NAVAL CASK PEDESTAL	51A-HMHO-PED-00003
NAVAL CANISTER SHIELD RING	51A-HMHO-HEQ-00001
NAVAL CANISTER SHIELD RING STAND	51A-HMHO-RK-00003
STATIONARY PREPARATION PLATFORM	51A-HMHO-PLAT-00001
CANISTER TRANSFER MACHINE	51A-HTCO-FHM-00001
CASK PORT SLIDE GATE	51A-HTCO-HTCH-00001
WP PORT SLIDE GATE	51A-HTCO-HTCH-00002
NAVAL CANISTER LIFTING DEVICE	51A-HTCO-MEQ-00001
NAVAL CANISTER LIFTING DEVICE STAND	51A-HTCO-RK-00001
NAVAL WP SHIELD RING	51A-HTCO-HEQ-00001
NAVAL WP SHIELD RING STAND	51A-HTCO-RK-00002
CASK TRANSFER CELL SHIELD DOOR	51A-IH00-DR-00001
POSITIONING CELL SHIELD DOOR 1	51A-IH00-DR-00002
POSITIONING CELL SHIELD DOOR 2	51A-IH00-DR-00003
WP LOADOUT SHIELD DOOR	51A-IH00-DR-00004
CTM MAINTENANCE CRANE	51A-H000-CRN-00001
WP HANDLING CRANE	51A-HMPO-CRN-00001
WP TRANSFER TROLLEY	51A-HL00-TRLY-00001
WP TRANSFER CARRIAGE DOCKING STATION	51A-HL00-75-00001
WP SHIELD RING 1	51A-HL00-HEQ-00001
WP SHIELD RING 2	51A-HL00-HEQ-00002
WP SHIELD RING STAND	51A-HL00-RK-00003
WP PALLET YOKE	51A-HL00-BEAM-00001
WP PALLET YOKE STAND	51A-HL00-RK-00001
WP SHIELD RING GRAPPLE	51A-HL00-MEQ-00005
WP SHIELD RING GRAPPLE STAND	51A-HL00-RK-00002
WP PEDESTAL 1	51A-HL00-MEQ-00001
WP PEDESTAL 2	51A-HL00-MEQ-00002
WP PEDESTAL 3	51A-HL00-MEQ-00003
WP PEDESTAL 4	51A-HL00-MEQ-00004
STATIONARY LOADOUT PLATFORM	51A-HL00-PLAT-00001

DRAWING INDEX

DRAWING NO.	DRAWING TITLE
51A-MHO-H000-00201-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 1 OF 11
51A-MHO-H000-00202-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 2
51A-MHO-H000-00203-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 3
51A-MHO-H000-00204-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 4
51A-MHO-H000-00205-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 5
51A-MHO-H000-00206-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 6
51A-MHO-H000-00207-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 7
51A-MHO-H000-00208-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 8
51A-MHO-H000-00209-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 9
51A-MHO-H000-00210-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 10
51A-MHO-H000-00211-000	INITIAL HANDLING FACILITY MECHANICAL HANDLING BLOCK FLOW DIAGRAM-LEVEL 3 SHEET 11

REFERENCE LIST

DOCUMENT NUMBER:	TITLE:
000-3DR-MGRO-00300-000-000	BASIS OF DESIGN FOR THE TAD CANISTER-BASED REPOSITORY DESIGN CONCEPT
000-MHO-MGRO-00101-000-00B	YUCCA MOUNTAIN PROJECT MECHANICAL HANDLING BLOCK FLOW DIAGRAM - LEVEL 1
51A-MHO-H000-00101-000-00A	INITIAL HANDLING FACILITY MECHANICAL HANDLING SYSTEM BLOCK FLOW DIAGRAM - LEVEL 2
800-MHO-HEEO-00201-000-00B	EMPLACEMENT AND RETRIEVAL BLOCK FLOW DIAGRAM LEVEL 3

HOLD

14

REVISION HISTORY

APPROVALS	INITIAL/DATE	DESCRIPTION
ORIGINATOR L. LEWIS	12/4/06	ISSUED FOR LA
ENGINEER M. PLINSKI	12/12/06	
ENGINEERING GROUP SUPERVISOR M. LQFOUNTAIN	12-04-2006	
PROJECT ENGINEER D. TOOKER	12-04-2006	
DISCIPLINE ENGINEERING MANAGER	N/A	
N/A		
DE CONCURRENCE	N/A	

SAFETY CLASSIFICATION		DOCUMENT IDENTIFIER	
NON-ITS & NON-LTW		51A-MHO-H000-00201-000	
SIZE	SCALE	CAD FILENAME	REV
D	N/A	51amh0h00000201.dgn	00A
CAGE CODE: N/A			

BSC**Drawing Change Notice**

1. QA: N/A

2. Page 1 of 2

Complete only applicable items.

3. DCN No.: 51A-MH0-H000-00201-000-00A-DCN001											
4. Drawing No.: 51A-MH0-H000-00201-000	5. Rev. No.: 00A										
6. Title of Drawing: Initial Handling Facility Mechanical Handling System Block Flow Diagram-Level 3, Sheet 1 of 11											
7. Reason for Change: Update Equipment Name and Numbers, Add Grapples to Equipment List, and Remove Hold	8. Trend Code No.: 06, 13										
9. Does this DCN cancel or supersede another DCN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No DCN No.: N/A											
10. Other Documents Affected by This Change: N/A											
11. Description of Change: To maintain consistency with the other nuclear facilities, the following equipment name and number changes have been made: <ul style="list-style-type: none"> • The equipment number for the Cask Handling Crane has changed from 51A-HMC0-CRN-00001 to 51A-HM00-CRN-00001. • The equipment number for the Cask Yoke Type 1 has changed from 51A-HMC0-BEAM-00001 to 51A-HM00-BEAM-00001. • The equipment number for the Cask Yoke Type 1 Stand changed from 51A-HMC0-RK-00001 to 51A-HM00-RK-00001. • The equipment number for the Cask Yoke Type 2 has changed from 51A-HMC0-BEAM-00002 to 51A-HM00-BEAM-00002. • The equipment number for the Cask Yoke Type 2 Stand changed from 51A-HMC0-RK-00002 to 51A-HM00-RK-00002. • The equipment number for the Naval Cask Lifting Device has changed from 51A-HMC0-BEAM-00003 to 51A-HM00-BEAM-00003. • The equipment number for the Naval Cask Lifting Device Stand changed from 51A-HMC0-RK-00003 to 51A-HM00-RK-00003. • The equipment name of the Mobile Platform Trolley changed to the Mobile Access Platform. • The equipment number for the Cask Transfer Trolley changed from 51A-HMH0-TRLY-00001 to 51A-HM00-TRLY-00001. • The equipment name of the Stationary Preparation Platform changed to the Cask Preparation Platform. • The equipment number for the Naval Canister Lifting Device changed from 51A-HTC0-MEQ-00001 to 51A-HTC0-HEQ-00005. • The equipment number for the CTM Maintenance Crane changed from 51A-H000-CRN-00001 to 51A-HTC0-CRN-00001. • The equipment number for the WP Shield Ring Grapple changed from 51A-HL00-MEQ-00005 to 51A-HL00-HEQ-00003. • The equipment number for the WP Pedestal 1 changed from 51A-HL00-MEQ-00001 to 51A-HL00-PED-00001. • The equipment number for the WP Pedestal 2 changed from 51A-HL00-MEQ-00002 to 51A-HL00-PED-00002. • The equipment number for the WP Pedestal 3 changed from 51A-HL00-MEQ-00003 to 51A-HL00-PED-00003. • The equipment number for the WP Pedestal 4 changed from 51A-HL00-MEQ-00004 to 51A-HL00-PED-00004. • The equipment name of the Stationary Loadout Platform changed to the Loadout Platform 1. • The equipment number for the WP Closure Room Crane changed from 51A-HWW0-CRN-00001 to 51A-HW00-CRN-00001. <p>Also, the following equipment has been added to the equipment list:</p> <table border="1"> <thead> <tr> <th>Equipment Name</th> <th>Equipment Number</th> </tr> </thead> <tbody> <tr> <td>CTM Canister Grapple</td> <td>51A-HTC0-HEQ-00002</td> </tr> <tr> <td>WVDP Canister Grapple</td> <td>51A-HTC0-HEQ-00003</td> </tr> <tr> <td>DWPF Canister Grapple</td> <td>51A-HTC0-HEQ-00004</td> </tr> <tr> <td>Loadout Platform 2</td> <td>51A-HL00-PLAT-00002</td> </tr> </tbody> </table>		Equipment Name	Equipment Number	CTM Canister Grapple	51A-HTC0-HEQ-00002	WVDP Canister Grapple	51A-HTC0-HEQ-00003	DWPF Canister Grapple	51A-HTC0-HEQ-00004	Loadout Platform 2	51A-HL00-PLAT-00002
Equipment Name	Equipment Number										
CTM Canister Grapple	51A-HTC0-HEQ-00002										
WVDP Canister Grapple	51A-HTC0-HEQ-00003										
DWPF Canister Grapple	51A-HTC0-HEQ-00004										
Loadout Platform 2	51A-HL00-PLAT-00002										
12. ORIGINATOR: (Name/Signature) Bryan Elliott <i>Bryan Elliott</i>	DATE: 2-1-07										
13. CHECKER: (Name/Signature) Lance Lewis <i>[Signature]</i>	DATE: 2-1-07										
14. EGS: (Name/Signature) M. LaFountain <i>[Signature]</i>	DATE: 2-7-07										
15. PE/DEM: (Name/Signature) D. Tooker <i>David W. Tooker</i>	DATE: 2-07-2007										

Drawing Change Notice

Complete only applicable items.

1. QA: N/A

2. Page 2 of 2

3. DCN No.:

51A-MH0-H000-00201-000-00A-DCN001

4. Drawing No.:

51A-MH0-H000-00201-000

5. Rev. No.:

00A

6. Title of Drawing:

Initial Handling Facility Mechanical Handling System Block Flow Diagram-Level 3, Sheet 1 of 11

11. Description of Change (Continued):

Additionally, the Hold on reference 800-HM0-HEE0-00201-000-00B has been removed, and the associated hold note (Flag Note 14) has been deleted, since this reference drawing has been issued. The reference drawing was reviewed after being issued for any impacts to this Block Flow Diagram.



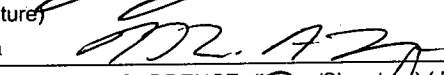
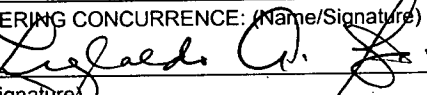
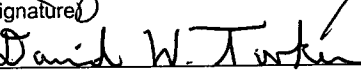
These changes to the drawing are administrative and minor. These changes have no affect on the process presented by this group of drawings.

BSC**Drawing Change Notice**

Complete only applicable items.

1. QA: QA

2. Page 1 of 1

3. DCN No.: 51A-MH0-H000-00201-000-00A-DCN002	
4. Drawing No.: 51A-MH0-H000-00201-000	5. Rev. No.: 00A
6. Title of Drawing: Initial Handling Facility Mechanical Handling System Block Flow Diagram - Level 3 Sheet 1 of 11	
7. Reason for Change: The appropriate classification for block flow diagrams describing functions of ITS SSCs is "ITS". This is in accordance with the position statement in Interoffice Memorandum No. 0220070410 and CR #9814.	8. Trend Code No.: (See section 11.3)
9. Does this DCN cancel or supersede another DCN? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No DCN No.: N/A	
10. Other Documents Affected by This Change: None	
11. Description of Change: 11.1: Revise the safety classification in the safety classification block from "NON-ITS & NON-ITWI" to "ITS". 11.2: Change the following Drawing Note 11: From: "Quality level is not applicable because this drawing is not issued for procurement, construction, or fabrication." To: "This drawing includes structures, systems and components (SSCs) whose nuclear safety design bases functions have been classified as ITS or ITWI. This drawing does not define the safety classification of SSCs; therefore, flags and boundaries are not shown. Refer to the Basis of Design (BOD) or the appropriate design product for safety classification of an individual SSC." 11.3 Note: This DCN does not require a trend notice. The change does not affect project scope, schedule or cost.	
12. ORIGINATOR: (Name/Signature) Art Roussopoulos 	DATE: 05/18/07
13. CHECKER: (Name/Signature) Lance Lewis 	DATE: 5/10/07
14. EGS: (Name/Signature) Maurice LaFountain 	DATE: 5-10-07
15. QUALITY ENGINEERING CONCURRENCE: (Name/Signature) (Required for ITS and ITWI SSCs only) Paul Buenviaje 	DATE: 05/10/07
16. PE/DEM: (Name/Signature) Dave Tooker 	DATE: 5/10/2007